SHARP
SUPPLEMENTAL SERVICE MANUAL

S2401R820BPW/

DOUBLE GRILL CONVECTION MICROWAVE OVEN

MODEL R-820BC

In the interest of user-safety the oven should be restored to its original condition and only parts identical to those specified should be used.

WARNING TO SERVICE PERSONNEL: Microwave ovens contain circuitry capable of producing very high voltage and current, contact with following parts may result in a severe, possibly fatal, electrical shock. (High Voltage Capacitor, High Voltage Power Transformer, Magnetron, High Voltage Rectifier Assembly, High Voltage Harness etc..)

This is a supplemental Service Manual for Model R-820BC. This model is quite similar to base model R-820BW. Use this supplemental manual together with the Base Model Service Manual (Refer No. is S5812R820BPW/) for complete operation, service information, etc..

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SHARP CORPORATION

This document has been published to be used for after sales service only.
The contents are subject to change without notice.

PRECAUTIONS TO BE OBSERVED BEFORE AND DURING SERVICING TO AVOID POSSIBLE EXPOSURE TO EXCESSIVE MICROWAVE ENERGY

(a) Do not operate or allow the oven to be operated with the door open.
(b) Make the following safety checks on all ovens to be serviced before activating the magnetron or other microwave source, and make repairs as necessary: (1) interlock operation, (2) proper door closing, (3) seal and sealing surfaces (arcing, wear, and other damage), (4) damage to or loosening of hinges and latches, (5) evidence of dropping or abuse.
(c) Before turning on microwave power for any service test or inspection within the microwave generating compartments, check the magnetron, wave guide or transmission line, and cavity for proper alignment, integrity, and connections.
(d) Any defective or misadjusted components in the interlock, monitor, door seal, and microwave generation and transmission systems shall be repaired, replaced, or adjusted by procedures described in this manual before the oven is released to the owner.
(e) A microwave leakage check to verify compliance with the Federal Performance Standard should be performed on each oven prior to release to the owner.

BEFORE SERVICING

Before servicing an operative unit, perform a microwave emission check as per the Microwave Measurement Procedure outlined in this service manual.
If microwave emissions level is in excess of the specified limit, contact SHARP ELECTRONICS CORPORATION immediately @1-800-237-4277.

If the unit operates with the door open, service person should 1) tell the user not to operate the oven and 2) contact SHARP ELECTRONICS CORPORATION and Food and Drug Administration's Center for Devices and Radiological Health immediately.

Service personnel should inform SHARP ELECTRONICS CORPORATION of any certified unit found with emissions in excess of 4mW/cm^2. The owner of the unit should be instructed not to use the unit until the oven has been brought into compliance.

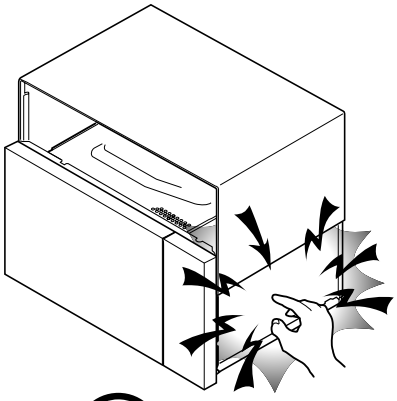
WARNING TO SERVICE PERSONNEL

Microwave ovens contain circuitry capable of producing very high voltage and current, contact with following parts may result in a severe, possibly fatal, electrical shock.

(Example)

High Voltage Capacitor, High Voltage Power Transformer, Magnetron, High Voltage Rectifier Assembly, High Voltage Harness etc..

Read the Service Manual carefully and follow all instructions.



Don't Touch !
Danger High Voltage

Before Servicing

1. Disconnect the power supply cord, and then remove outer case.
2. Open the door and block it open.
3. Discharge high voltage capacitor.

WARNING: RISK OF ELECTRIC SHOCK. DISCHARGE THE HIGH-VOLTAGE CAPACITOR BEFORE SERVICING.

The high-voltage capacitor remains charged about 60 seconds after the oven has been switched off. Wait for 60 seconds and then short-circuit the connection of the high-voltage capacitor (that is the connecting lead of the high-voltage rectifier) against the chassis with the use of an insulated screwdriver.

Whenever troubleshooting is performed the power supply must be disconnected. It may in, some cases, be necessary to connect the power supply after the outer case has been removed, in this event,

1. Disconnect the power supply cord, and then remove outer case.
2. Open the door and block it open.
3. Discharge high voltage capacitor.
4. Disconnect the leads to the primary of the power transformer.
5. Ensure that the leads remain isolated from other components and oven chassis by using insulation tape.
6. After that procedure, reconnect the power supply cord.

When the testing is completed,

1. Disconnect the power supply cord, and then remove outer case.
2. Open the door and block it open.
3. Discharge high voltage capacitor.
4. Reconnect the leads to the primary of the power transformer.
5. Reinstall the outer case (cabinet).
6. Reconnect the power supply cord after the outer case is installed.
7. Run the oven and check all functions.

After repairing

1. Reconnect all leads removed from components during testing.
2. Reinstall the outer case (cabinet).
3. Reconnect the power supply cord after the outer case is installed.
4. Run the oven and check all functions.

Microwave ovens should not be run empty. To test for the presence of microwave energy within a cavity, place a cup of cold water on the oven turntable, close the door and set the power to HIGH and set the microwave timer for two (2) minutes. When the two minutes has elapsed (timer at zero) carefully check that the water is now hot. If the water remains cold carry out **Before Servicing** procedure and re-examine the connections to the component being tested.

When all service work is completed and the oven is fully assembled, the microwave power output should be checked and microwave leakage test should be carried out.

MICROWAVE MEASUREMENT PROCEDURE

A. Requirements:

1) Microwave leakage limit (Power density limit): The power density of microwave radiation emitted by a microwave oven should not exceed 1mW/cm^2 at any point 5cm or more from the external surface of the oven, measured prior to acquisition by a purchaser, and thereafter (through the useful life of the oven), 5 mW/cm^2 at any point 5cm or more from the external surface of the oven.
2) Safety interlock switches Primary interlock relay and door sensing switch shall prevent microwave radiation emission in excess of the requirement as above mentioned, secondary interlock switch shall prevent microwave radiation emission in excess of 5 mW/cm^2 at any point 5cm or more from the external surface of the oven.

B. Preparation for testing:
Before beginning the actual measurement of leakage, proceed as follows:
1) Make sure that the actual instrument is operating normally as specified in its instruction booklet.

   Important:
   Survey instruments that comply with the requirement for instrumentation as prescribed by the performance standard for microwave ovens, 21 CFR 1030.10(c)(3)(i), must be used for testing.

2) Place the oven tray in the oven cavity.
3) Place the load of 275±15 ml (9.8 oz) of tap water initially at 20±5˚C (68˚F) in the center of the oven cavity.
   The water container shall be a low form of 600 ml (20 oz) beaker with an inside diameter of approx. 8.5 cm (3-1/2 in.) and made of an electrically nonconductive material such as glass or plastic.
   The placing of this standard load in the oven is important not only to protect the oven, but also to insure that any leakage is measured accurately.
4) Set the cooking control on Full Power Cooking Mode
5) Close the door and select a cook cycle of several minutes. If the water begins to boil before the survey is completed, replace it with 275 ml of cool water.

C. Leakage test:

Closed-door leakage test (microwave measurement)
1) Grasp the probe of the survey instrument and hold it perpendicular to the gap between the door and the body of the oven.
2) Move the probe slowly, not faster than 1 in./sec. (2.5 cm/sec.) along the gap, watching for the maximum indication on the meter.
3) Check for leakage at the door screen, sheet metal seams and other accessible positions where the continuity of the metal has been breached (eg., around the switches, indicator, and vents).
   While testing for leakage around the door pull the door away from the front of the oven as far as is permitted by the closed latch assembly.
4) Measure carefully at the point of highest leakage and make sure that the highest leakage is no greater than 4mW/cm^2, and that the secondary interlock switch does turn the oven OFF before any door movement.

NOTE: After servicing, record data on service invoice and microwave leakage report.

SERVICE MANUAL

SHARP

DOUBLE GRILL
CONVECTION
MICROWAVE OVEN

R-820BC

FOREWORD

This Manual has been prepared to provide Sharp Electronics Corp. Service Personnel with Operation and Service Information for the SHARP MICROWAVE OVEN, R-820BC.

The model R-820BC is quite similar to base model R-820BW (Refer No. is S5812R820BPW/).

It is recommended that service personnel carefully study the entire text of this manual and the based model's manual so that they will be qualified to render satisfactory customer service.

Check the interlock switches and the door seal carefully. Special attention should be given to avoid electrical shock and microwave radiation hazard.

WARNING

Never operate the oven until the following points are ensured.
(A) The door is tightly closed.
(B) The door brackets and hinges are not defective.
(C) The door packing is not damaged.
(D) The door is not deformed or warped.
(E) There is no other visible damage with the oven.

Servicing and repair work must be carried out only by trained service personnel.

DANGER

Certain initial parts are intentionally not grounded and present a risk of electrical shock only during servicing.
Service personnel - Do not contact the following parts while the appliance is energized;
High Voltage Capacitor, Power Transformer, Magnetron, High Voltage Rectifier Assembly, High Voltage Harness;
If provided, Vent Hood, Fan assembly, Cooling Fan Motor.

All the parts marked "*" on parts list are used at voltages more than 250V.

Removal of the outer wrap gives access to voltage above 250V.

All the parts marked "Δ" on parts list may cause undue microwave exposure, by themselves, or when they are damaged, loosened or removed.

SHARP ELECTRONICS CORPORATION

SHARP PLAZA, MAHWAH,
NEW JERSEY 07430-2135

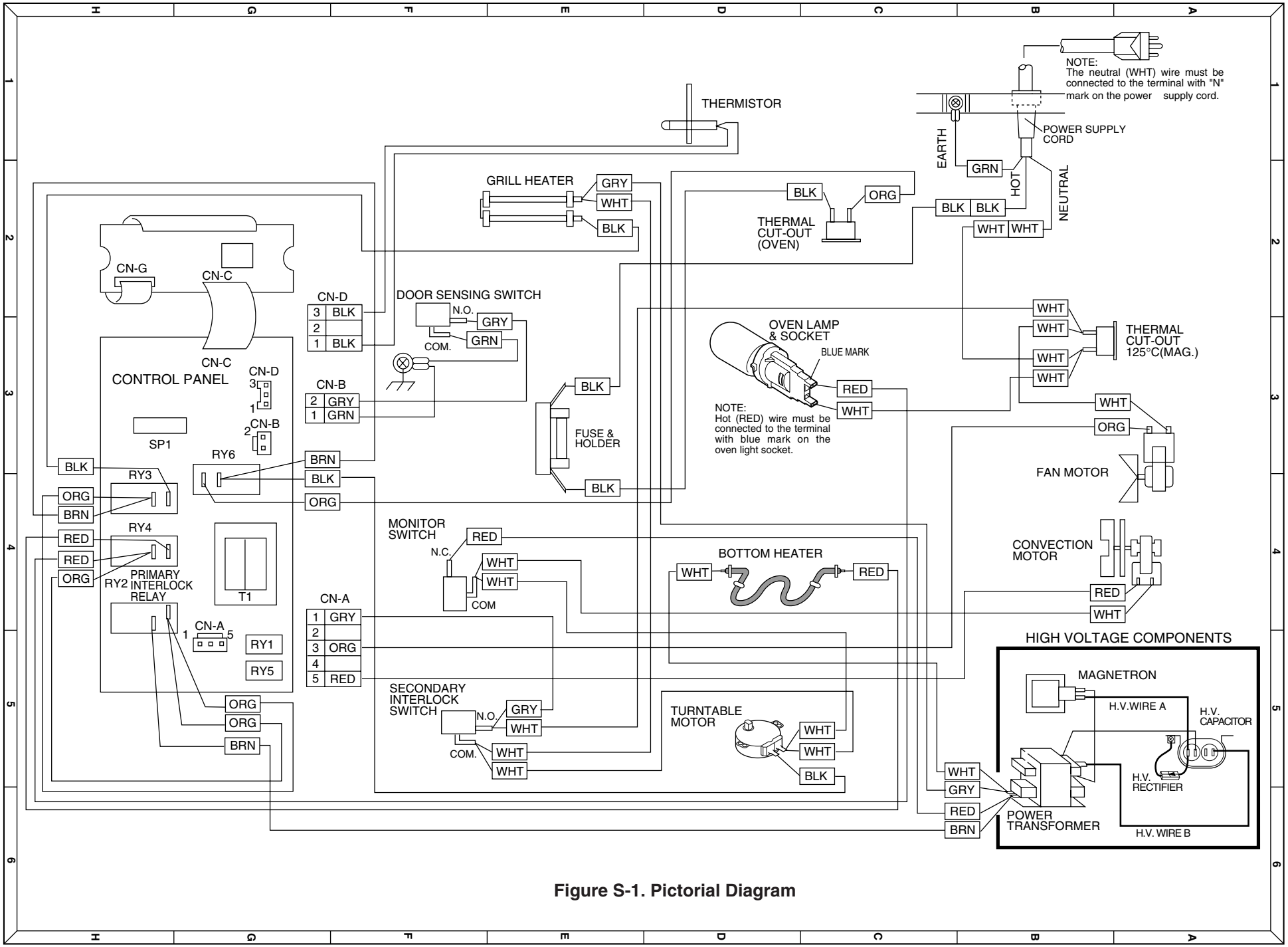
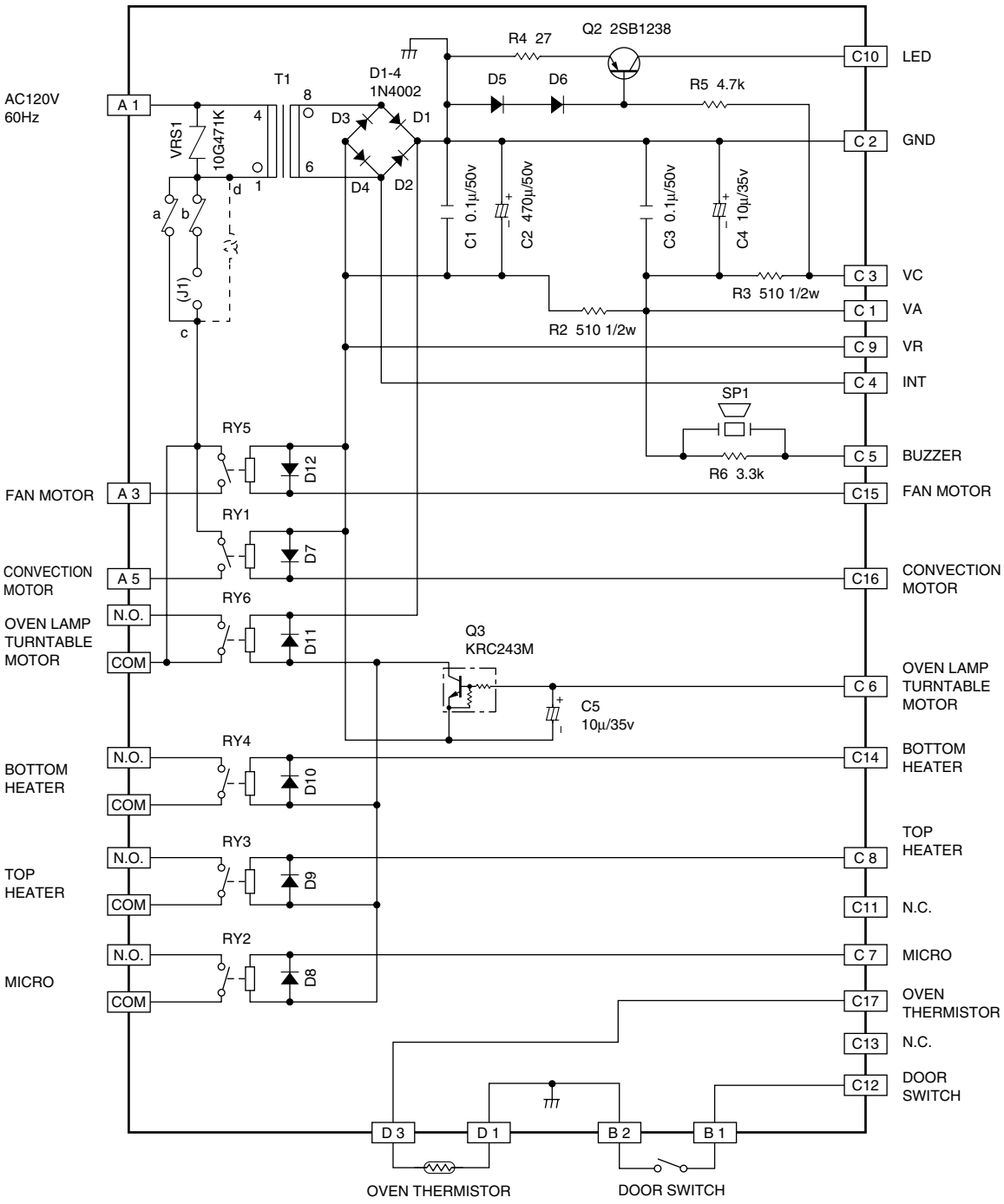


Figure S-1. Pictorial Diagram



NOTE : IF NOT SPECIFIED, 1/4w ± 5%

: IF NOT SPECIFIED, 1SS270A

Figure S-2. Power Unit Circuit

PARTS LIST

Note: The parts marked "Δ" may cause undue microwave exposure.
The parts marked "*" are used in voltage more than 250V.

	REF. NO.	PART NO.	DESCRIPTION	Q'TY	CODE
			ELECTRIC PARTS		
	1- 1	QSW-MA110WRE0	Secondary interlock switch / door sensing switch	2	AH
	1- 1	QSW-MA131WRE0	Secondary interlock switch / door sensing switch (Interchangeable)	2	AG
	1- 2	FFS-BA021WRK0	Monitor fuse and monitor switch (V-16G-2C25(R)) assembly	1	AL
	1- 3	RMOTDA140WRE0	Turntable motor	1	AV
	1- 3	RMOTDA231WRE0	Turntable motor (Interchangeable)	1	AR
	1- 3	RMOTDA188WRE0	Turntable motor (Interchangeable)	1	AS
*	1- 4	FH-DZA025WRK0	High voltage rectifier assembly	1	AN
*	1- 5	RC-QZA173WRE0	High voltage capacitor (Interchangeable)	1	AX
*	1- 5	RC-QZA211WRE0	High voltage capacitor	1	AV
	1- 6	RMOTEA370WRE0	Fan motor	1	AX
	1- 7	QFSHDA009WRE0	Fuse holder	1	AG
	1- 7	QFSHDA010WRE0	Fuse holder (Interchangeable)	1	AD
	1- 8	FACCDA074WRE0	Power supply cord	1	AW
	1- 9	FH-HZA063WRE0	Thremistor	1	AP
	1-10	RMOTEA372WRE0	Convection motor	1	AX
	1-11	QTANNA017WRW0	Short terminal	1	AD
	1-12	RHET-A223WRE0	Grill heater (Top heater)	2	AV
	1-13	RHET-A209WRE0	Bottom heater	1	BA
	1-14	RLMPTA030WRE0	Oven lamp	1	AE
	1-15	QSOCLA021WRE0	Oven lamp socket	1	AG
	1-16	RTHM-A109WRE0	Thermal cut-out 170 deg.	1	AM
	1-17	RTHM-A078WRE0	Thermal cut-out 125 deg.	1	AK
*	1-18	RTRN-A568WRE0	Power transformer	1	BP
Δ*	1-19	RV-MZA222WRE0	Magnetron	1	BN
Δ*	1-19	RV-MZA267WRE0	Magnetron (Interchangeable)	1	BL
			CABINET PARTS		
	2- 1	GCABDA097WRW0	Back plate	1	AW
	2- 2	GCABUA886WRPZ	Outer case cabinet	1	BE
	2- 3	GDAI-A305WRW0	Base plate	1	AX
	2- 4	GLEGPA074WRE0	Leg	2	AC
			CONTROL PANEL PARTS		
	3- 1	DPWBFB795WRK0	Power unit	1	BD
	3- 1A	QCNCMA234DRE0	3-pin connector (CN-A)	1	AC
	3- 1B	QCNCMA275DRE0	2-pin connector (CN-B)	1	AB
	3- 1C	FW-VZA238DRE0	9pin wire harness (WH-1, WH-2)	2	AK
	3- 1D	QCNCMA410DRE0	2-pin connector (CN-D)	1	AB
	C1	RC-KZA087DRE0	Capacitor 0.1 uF 50V	1	AA
	C2	VCEAB31HW477M	Capacitor 470 uF 50V	1	AE
	C3	RC-KZA087DRE0	Capacitor 0.1 uF 50V	1	AA
	C4-5	VCEAB31VW106M	Capacitor 10 uF 35V	2	AA
	D1-4	RH-DZA006PRE0	Diode (1N4002)	4	AD
	D5-7	VHD1SS270A/-1	Diode (1SS270A)	3	AA
	D8-12	VHD1SS270A/-1	Diode (1SS270A)	5	AA
	Q2	VS2SB1238//-3	Transistor (2SB1238)	1	AA
	Q3	VSKRC243M//-3	Transistor (KRC243M)	1	AB
	R2-3	VRD-B12HF511J	Resistor 510 ohm 1/2W	2	AB
	R4	VRD-B12EF270J	Resistor 27 ohm 1/4W	1	AB
	R5	VRD-B12EF472J	Resistor 4.7k ohm 1/4W	1	AA
	R6	VRD-B12EF332J	Resistor 3.3k ohm 1/4W	1	AA
	RY1	RRLY-A080DRE0	Relay (OJ-SH-124LM)	1	AG
	RY2-4	RRLY-A076DRE0	Relay (OMIF-S-124LM)	3	AK
	RY5	RRLY-A080DRE0	Relay (OJ-SH-124LM)	1	AG
	RY6	RRLY-A076DRE0	Relay (OMIF-S-124LM)	1	AK
	SP1	RALM-A014DRE0	Buzzer (PKM22EPT-THAI)	1	AG
	T1	RTRNPA124DRE0	Transformer	1	AQ
	VRS1	RH-VZA032DRE0	Varistor (10G471K)	1	AE
	3- 2	DPWBFB794WRK0	CPU unit	1	BC
	3- 3	DPNLCB893WRKZ	Control panel frame with key unit	1	BB
	3- 3-1	JBTN-B267WRTZ	Open button	1	AN
	3- 3-2	MSPRCA050WRE0	Open button spring	1	AB
	3- 3-3	FUNTKB149WREZ	Key unit	1	AX
	3- 3-4	TCAUAA076WRR0	User caution label	1	AB
	3- 4	LHLD-A185WRF0	LCD holder	1	AL
	3- 5	PSHEPA626WRE0	LED sheet	1	AF
	3- 6	**********	This user caution label has been changed to 3-3-4.		

	REF. NO.	PART NO.	DESCRIPTION	Q'TY	CODE
	3- 7	XEPSD30P08XS0	Screw; 3mm x 8mm	4	AA

OVEN PARTS

Δ	4- 1	**********	Oven cavity (Not a replaceable part)	1	--
Δ	4- 2	PHOK-A106WRF0	Latch hook	1	AL
	4- 3	FDUC-A337WRK0	Air duct assembly	1	BH
	4- 4	PCOVPA340WRW0	Sub back plate	1	AQ
	4- 5	LANGQA478WRP0	Turntable motor angle	1	AP
	4- 6	MSPRTA186WRE0	Plate spring	1	AE
	4- 7	NCPL-A051WRE0	Turntable motor shaft	1	AN
	4- 8	PSPA-A109WRE0	Spacer	1	AB
	4- 9	LBNDKA136WRP0	HV capacitor holder	1	AQ
	4-10	NFANJA041WRE0	Fan blade	1	AF
	4-11	PDUC-A697WRF0	Fan duct	1	AM
	4-12	GCOVHA388WRW0	Bottom heater cover	1	AF
	4-13	GLEGPA071WRF0	Leg	1	AG
	4-14	LANGFA191WRW0	Chassis support	1	AN
	4-15	LANGQA489WRP0	Thermistor angle	1	AW
	4-16	LFLG-A030WREZ	Bearing	1	AM
	4-17	MLEVPA226WRF0	Switch lever	1	AF
	4-18	MSPR-A004WRE0	Heat seal spring	2	AF
	4-19	PCOV-A011WRP0	Bottom heater angle	2	AM
	4-20	PCOVPA339WRE0	Waveguide cover	1	AF
	4-21	PCUSGA385WRP0	Cushion	1	AH
	4-22	PCUSUA190WRP0	Cushion	1	AC
	4-23	PCUSUA191WRP0	Cushion	1	AC
	4-24	PDUC-A691WRF0	Air intake duct	1	AG
	4-25	PDUC-A692WRP0	Exhaust duct	1	AS
	4-26	PDUC-A784WRWZ	Air guide	1	AP
	4-27	PGLSPA518WRE0	Light glass	1	AZ
	4-28	PPACGA050WRE0	Cushion	1	AE
	4-29	PREFHA061WRW0	Reflector	1	BE
	4-30	PSHEPA487WRE0	Heater film	1	AA
	4-31	PSKR-A331WRP0	Air separate angle	1	AY
	4-32	MSPRCA113WRE0	H-spring	2	AC
	4-33	PCUSGA420WRP0	Cushion	1	AE
	4-34	NFANMA047WRP0	Convection fan	1	AX
	4-35	NFANMA048WRP0	Cooling fan	1	AX
	4-36	PCUSUA499WRP0	Cushion	1	AC
	4-37	PDUC-A707WRW0	Convection duct	1	AR
	4-38	PFPF-A210WRE0	Thermal insulation	1	AM
	4-39	PPIPFA030WRE0	Pipe	1	AK
	4-40	PSKR-A339WRP0	Convection air angle	2	AX
	4-41	PSKR-A345WRW0	Convection motor angle A	1	AU
	4-42	PSKR-A346WRW0	Convection motor angle B	1	AR
	4-43	PSLDHA140WRW0	Convection thermal cover	1	AQ
	4-44	PCUSGA389WRP0	Cushion	1	AG

DOOR PARTS

Δ	5- 1	DDORFA857WRK0	Door panel assembly	1	BB
Δ	5- 2	GWAKPA948WRRZ	Door frame	1	AZ
Δ	5- 3	LSTPPA176WRF0	Latch head	1	AN
	5- 4	LSTPPA177WRF0	Glass stopper	1	AF
	5- 5	MSPRTA187WRE0	Latch spring	1	AC
	5- 6	PGLSPA513WRE0	Front door glass	1	AV
	5- 7	**********	These screws have been changed to 5-8.	0	
	5- 8	XCPSD40P08000	Screw : 4mm x 8mm	6	AA
	5- 9	GCOVHA387WRF0	Choke cover	1	AS

MISCELLANEOUS

	6- 1	FAMI-A104WRM0	Rack	1	AQ
	6- 2	TCAUAA145WRR0	Earth caution	2	AG
	6- 3	FSRAHA063WRYZ	Turntable support	1	AK
	6- 4	NTNT-A097WRE0	Turntable	1	BB
	6- 5	TCAUAA200WRR0	Monitor caution	1	AB
	6- 6	TINSEB034WRRZ	Instruction book	1	AM
	6- 7	FW-VZB045WRE0	Switch harness	1	AG
	6- 8	FW-VZB872WREZ	Main wire harness	1	BB
*	6- 9	QW-QZA213WRE0	High voltage wire B	1	AF
	6-10	LHLDWA011WRE0	Purse lock M	1	AB
	6-11	TCAUAA201WRR0	DHHS caution label	1	AC
	6-12	TCAUAA240WRR0	Screw caution	1	AC
	6-13	TLABMA978WRRZ	Menu label	1	AL

REF. NO.	PART NO.	DESCRIPTION	Q'TY	CODE
6-14	TLABNB032WRRZ	Touch guide	1	AK

SCREWS,NUTS AND WASHERS

7- 1	XFPSD40P08K00	Screw : 4mm x 8mm	13	AA
7- 2	XEPSD40P25000	Screw : 4mm x 25mm	2	AA
7- 3	LX-EZA042WRE0	Special screw	2	AB
7- 4	LX-NZ0061WRE0	Flange nut	4	AA
7- 5	XBPWW30P05K00	Screw : 3mm x 5mm	2	AA
7- 6	XCTWW40P08000	Screw : 4mm x 8mm	8	AB
7- 7	XHPSD30P06000	Screw : 3mm x 6mm	1	AA
7- 8	XHTSD40P08RV0	Screw : 4mm x 8mm	3	AA
7- 9	XOTSD40P12RV0	Screw : 4mm x 12mm	13	AA
7-10	XOTSD40P12000	Screw : 4mm x 12mm	10	AA
7-11	**********	These line head screws have been changed to 7-9.	0	--
7-12	XOTSF40P08000	Screw : 4mm x 8mm	1	AA
7-13	XBTSD40P05000	Screw : 4mm x 5mm	2	AA
7-14	XNEUW40-32000	Nut : 4mm x 3.2mm	1	AA
7-15	XRESE40-06000	Ring : 4mm x 0.6mm	1	AA
7-16	XWHUW40-08000	Washer : 4mm x 0.8mm	1	AA
7-17	XWHUW48-08120	Washer : 4.8mm x 0.8mm	1	AA
7-18	XWSUW40-10000	Washer : 4mm x 1.0mm	1	AA
7-19	LX-CZA070WRE0	Special screw (Torx tamper proof screw)	2	AC
7-20	XCPSD40P08000	Screw : 4mm x 8mm	1	AA

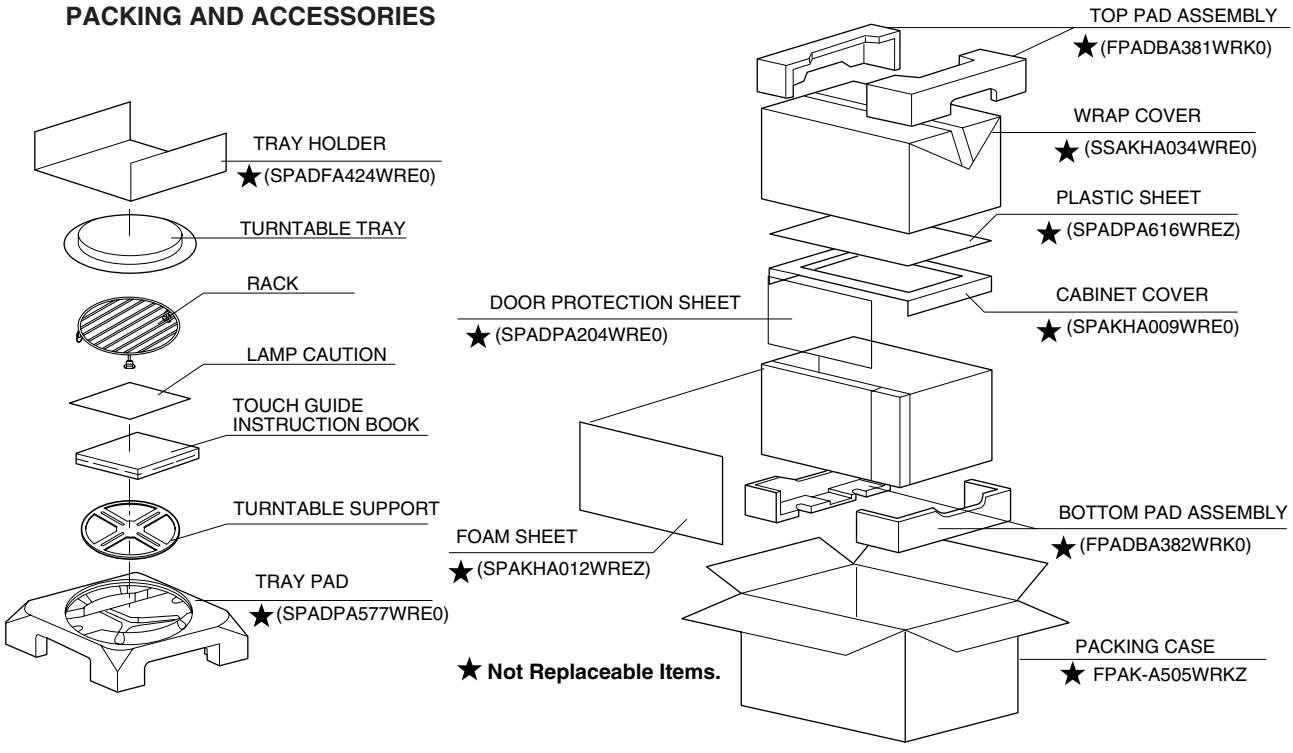
HOW TO ORDER REPLACEMENT PARTS

To have your order filled promptly and correctly, please furnish the following information.

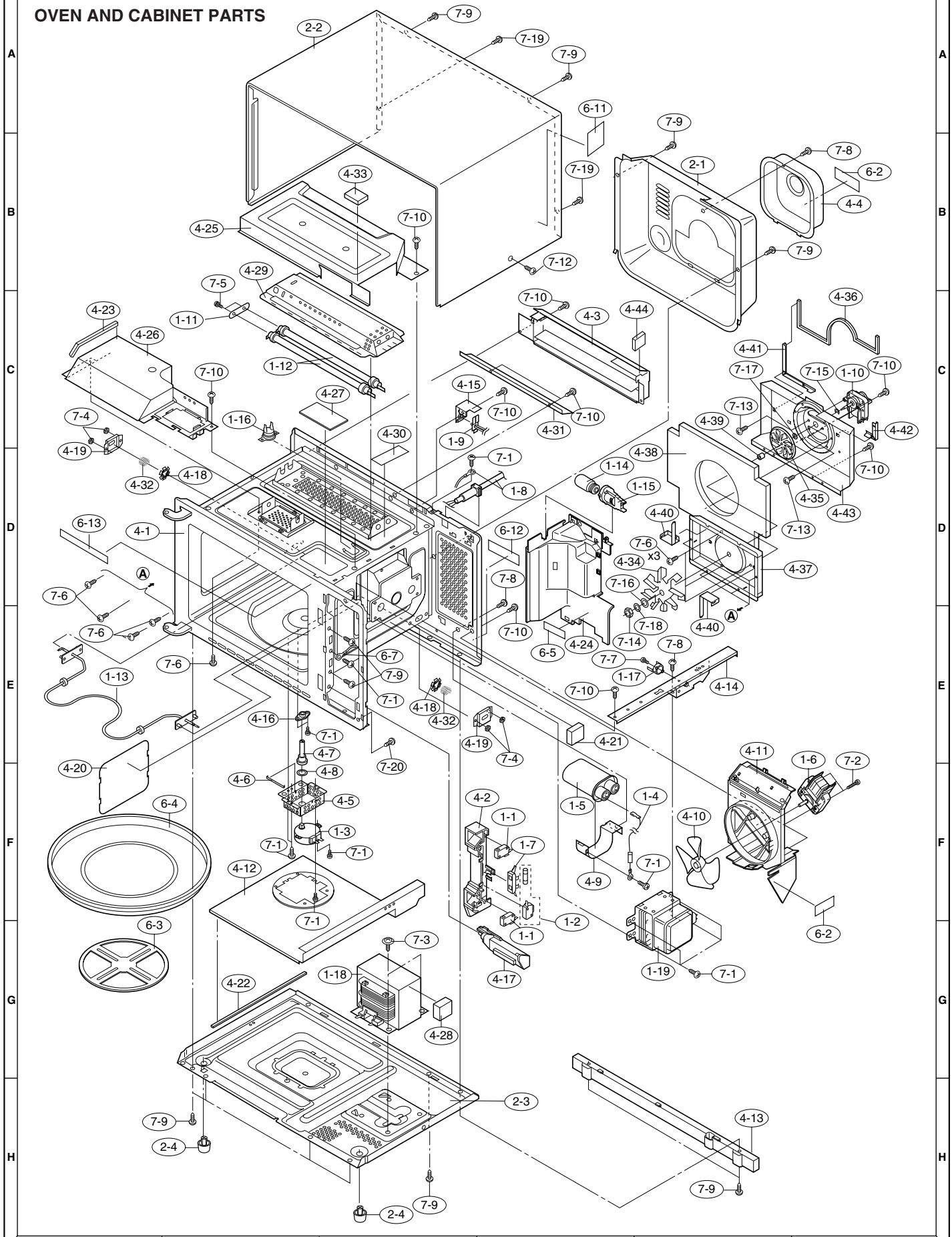
1. MODEL NUMBER 2. REF. NO. 3. PART NO. 4. DESCRIPTION

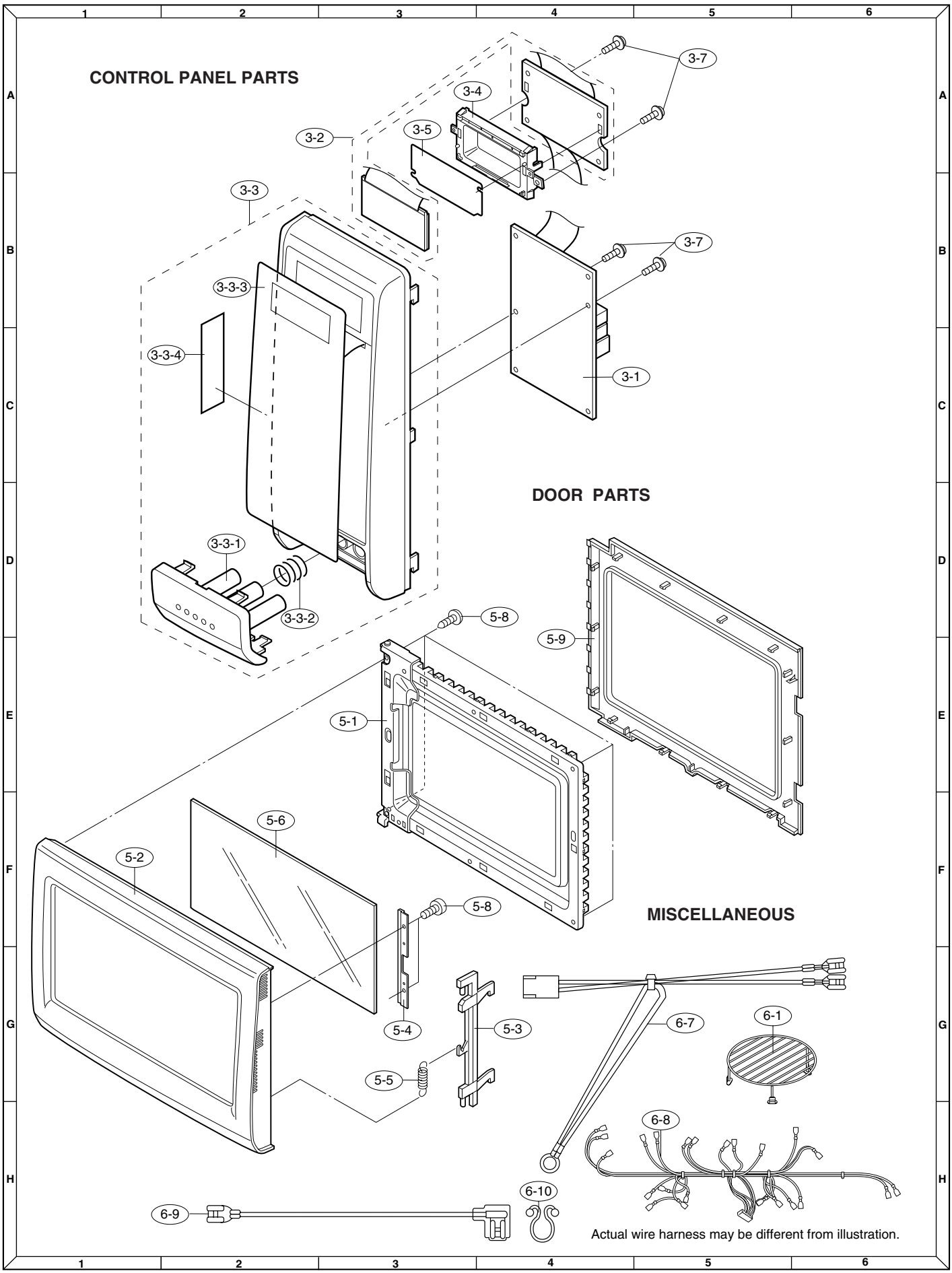
Order Parts from the authorized SHARP parts Distributor for your area.
Defective parts requiring return should be returned as indicated in the Service Policy.

PACKING AND ACCESSORIES



OVEN AND CABINET PARTS





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